

REMARKS

The Office Action dated August 28, 2006 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claim 17 has been amended to more particularly point out and distinctly claim the subject matter of the invention. Claim 19 has been cancelled. No new matter has been added. Claims 8-18 are currently pending in the application and are respectfully submitted for consideration.

The Office Action rejected claims 8 and 9 under 35 U.S.C. §103(a) as being unpatentable over Applicant's Admitted Prior Art (APA) in view of Mackmann (U.S. Patent No. 2,436,930). The Office Action cited Figure 6 as being the relevant Admitted Prior Art (APA). The Office Action took the position that APA discloses all of the elements of claims 8 and 9, with the exception of "an air passage for guiding air in an axial direction from one end of the reducer to the other end is formed in an outer peripheral surface of the casing for the reducer." The Office Action then cited Mackmann as allegedly disclosing this element of the claims. The rejection is respectfully traversed for the reasons which follow.

Claim 8, upon which claims 9-16 are dependent, recites a cooling mechanism for a motorized roller. The cooling mechanism for the motorized roller includes a roller body of the motorized roller, a motor disposed inside the roller body and housed in a motor

casing, and a reducer which is disposed inside the roller body and reduces the rotation of the motor to transmit the reduced rotation to the roller body, the reducer is housed in a reducer casing. A reaction force to the driving force of the roller body is able to be received, via the motor casing and the reducer casing, by an external member which fixes the motor casing and the reducer casing so that rotations of the casings are prevented, and an air passage for guiding air in an axial direction from one end of the reducer to the other end is formed in an outer peripheral surface of the casing for the reducer.

As will be discussed below, the APA and Mackmann fail to disclose or suggest all of the elements of the claims, and therefore fail to provide the features discussed above.

APA, as discussed in the specification, discloses a motor M1 and a reducer R1 that are housed inside a pipe body (a drum) 10, and the rotation of the motor M1 is reduced by the reducer R1 and then transmitted to the pipe body 10. The motor M1 is equipped with a motor shaft 12, and this motor shaft 12 also functions as the input shaft 13 for the reducer R1. The reducer R1 is a so-called oscillating inner gearing planetary gear reducer comprising the input shaft (a first shaft) 13, an external gear 16, an internal gear 18, and an output shaft (a second shaft) 20. The external gear 16 is incorporated into the outer periphery of the input shaft 13 via an eccentric body 14 and is able to undergo eccentric oscillating rotation relative to the input shaft 13. The internal gear 18 engages on the inside with the external gear 16. The output shaft 20 is connected to the external gear 16 so that the output shaft 20 can absorb the eccentric oscillation component of the external gear 16. (Specification, page 2, lines 1-18).

Mackmann discloses a motor reducer unit comprising an elongated motor housing 31 open at both ends and carrying motor field windings wound on a core 32 which is supported on internal annular flanges 33. One end of the housing is semi-permanently closed by an end cover 34. The gear reducer unit includes a cylindrical casing 38 which is detachably supported in inwardly extending annular flanges 39 in the housing. Inlet of air from the closed end of the housing is provided by openings 47 in the end plate 34 discharging on the interior of the guard 45. At the opposite end of the housing, air circulation is provided by openings 48 formed in the flanges 39.

Applicants respectfully submit that the combination of APA and Mackmann fails to disclose or suggest all of the elements of claim 8. For example, the combination of APA and Mackmann does not disclose or suggest “a reaction force to the driving force of the roller body is able to be received, via the motor casing and the reducer casing, by an external member which fixes the motor casing and the reducer casing so that rotations of the casings are prevented, and an air passage for guiding air in an axial direction from one end of the reducer to the other end is formed in an outer peripheral surface of the casing for the reducer,” as recited in claim 8. The Office Action, as discussed above, took the position that Mackmann discloses this element of the claims. However, Applicants respectfully disagree.

According to an embodiment of the present invention, because an air passage for guiding air in an axial direction from one end of the reducer to the other end is formed in the outer peripheral surface of the casing for the reducer, the air in the air passage is

prevented from moving in a circumferential direction in conjunction with the rotation of the roller body, so that movement of the air in the axial direction occurs extremely easily. As a result, air inside the roller body that has been heated by the heat generated by the motor and the reducer can be easily guided away from the casing of the reducer through the air passage, then, stagnation of the air around the vicinity of the reducer can be prevented, which can achieve a reduction in temperature increases inside the roller body. (Specification, page 6, line 22 – page 7, line 10).

Mackmann, on the other hand, does not disclose or suggest that the air passage is for guiding air in the space between the roller body and the reducer casing, in an axial direction from one end of the reducer to the other end or that the air passage is formed in an outer peripheral surface of the casing for the reducer. Mackmann, as discussed above, only discloses that air circulation is provided by having air enter through openings 47 and/or 48. The air is used to cool the reducer unit and then exits through openings 46 (Mackmann, Column 3, lines 8-19). Therefore, according to Mackmann, no air passage is formed in an outer peripheral surface of the casing for the reducer. Rather, according to Mackmann, the air enters through the openings 47 and/or 48 circulates through the center of the reducer casing and then exits through openings 46.

Accordingly, Applicants respectfully submit that Mackmann fails to disclose or suggest “a reaction force to the driving force of the roller body is able to be received, via the motor casing and the reducer casing, by an external member which fixes the motor casing and the reducer casing so that rotations of the casings are prevented, and an air

passage for guiding air in an axial direction from one end of the reducer to the other end is formed in an outer peripheral surface of the casing for the reducer,” as recited in claim 8. The APA also does not disclose or suggest this element of the claims as acknowledged by the Office Action. Thus, the combination of APA and Mackmann fails to disclose or suggest all of the elements of claim 8.

Claim 9 is dependent upon claim 8. As such, claim 9 should be allowed for at least its dependence upon claim 8, and for the specific limitations recited therein.

Claims 17-19 were rejected under 35 U.S.C. §102(b) as being anticipated by Christian (U.S. Patent No. 2,736,209). The rejection is respectfully traversed for the reasons which follow.

Claim 17, upon which claim 18 is dependent, recites a cooling mechanism for a motorized roller comprising. The cooling mechanism for the motorized roller includes a roller body of the motorized roller, a motor disposed inside the roller body and housed in a motor casing, a reducer disposed inside the roller body which reduces the rotation of the motor where the reducer is housed in a reducer casing, and a rotor which is disposed inside the roller body, and connected with the reducer and the roller body to transmit power of the reducer to the roller body. A reaction force to the driving force of the roller body is able to be received, via the motor casing and the reducer casing, by an external member which fixes the motor casing and the reducer casing so that rotations of the casings are prevented, and a ventilation passage is formed in the rotor in an axial direction. Mounting flanges that have a substantially circular plate shape and are capable

of relative rotation with respect to the roller body are provided at both end sections of the roller body, and ventilation passages are formed in the mounting flanges in the axial direction.

As will be discussed below, Christian fails to disclose or suggest all of the elements of the claims, and therefore fails to provide the features discussed above.

Christian discloses a driven drum power terminal where the driving means, including a prime mover and a reduction gear device, is enclosed within a drum that provides a power take-off. End walls are provided on the drum 6 by multi-armed spiders 7 and 8 secured at each end of the drum 6 by cap screws 9. Mounted within the drum is a prime mover device which includes a prime mover 12 to drive the drum and a gear reduction unit 13. A gear case cover 43 is secured by cap-screws to the wall 41. The gear case 42 is secured by four screws 46 to an annular motor mounting adapter 47. One end of a cylindrical shell 52 is secured by welding 53 to an end of the annular ring 50, while the other end of the shell 52 is closed by welding to a plate 54. End wall 8 is supported by bearing 56 on spindle 14. Plate 54 is provided with apertures 58 to admit air and pass lubricating conduits 59 to lubricate various bearings in the motor.

Applicants respectfully submit that Christian fails to disclose or suggest all of the elements of claim 17. For instance, Christian does not disclose or suggest that “mounting flanges that have a substantially circular plate shape and are capable of relative rotation with respect to the roller body are provided at both end sections of the roller body, and

ventilation passages are formed in the mounting flanges in the axial direction,” as recited in claim 17.

According to an embodiment of the present invention, mounting flanges that have a substantially circular plate shape and are capable of relative rotation with respect to the roller body may be provided at both end sections of the roller body, and ventilation holes may be formed in the mounting flanges in the axial direction. As a result, the motorized roller can be made more compact (particularly in the axial direction), and the mounting strength is improved. Furthermore, ventilation between the inside of the roller body and the exterior becomes possible through the ventilation holes, and a reduction in potential temperature increases inside the roller body can be achieved.

Applicants respectfully assert that Christian fails to disclose or suggest such a configuration where mounting flanges are provided at both end sections of the roller body, and ventilation passages are formed in the mounting flanges in the axial direction. Rather, Christian merely discloses that a “plate 54 is provided with apertures 58 to admit air and pass lubricating conduits 59 to lubricate various bearings in the motor” (Christian, Column 3, lines 7-9). Applicants respectfully submit that the apertures 58 provided in the plate 54 of Christian do not correspond to a ventilation passage being formed in the rotor in an axial direction. Therefore, Christian fails to disclose or suggest that “mounting flanges that have a substantially circular plate shape and are capable of relative rotation with respect to the roller body are provided at both end sections of the roller body, and

ventilation passages are formed in the mounting flanges in the axial direction,” as recited in claim 17.

Claim 18 is dependent upon claim 17. As such, claim 18 should be allowed for at least its dependence upon claim 17, and for the specific limitations recited therein.

Claims 10-15 were rejected under 35 U.S.C. §103(a) as being unpatentable over Applicant’s Admitted Prior Art (APA) in view of Mackmann and further in view of Christian. The Office Action took the position that APA and Mackmann disclose all of the elements of the claims, with the exception of having an air passage formed on an inner peripheral surface of the roller body. The Office Action then cited Christian as allegedly curing this deficiency in APA and Mackmann. The rejection is respectfully traversed for the reasons which follow.

Applicants note that claims 10-15 are dependent upon claim 8. As discussed above, the combination of Mackmann and APA does not disclose or suggest all of the elements of claim 8. Furthermore, Christian does not cure these deficiencies in APA and Mackmann, as Christian also does not disclose or suggest that an air passage for guiding air in an axial direction from one end of the reducer to the other end is formed in an outer peripheral surface of the casing for the reducer. Therefore, the combination of APA, Mackmann and Christian fails to disclose or suggest all of the elements of claims 10-15. In any case, claims 10-15 should be allowed for at least their dependence upon claim 8, and for the specific limitations recited therein.

Applicants respectfully submit that the cited prior art fails to disclose or suggest all of the elements of the claimed invention. These distinctions are more than sufficient to render the claimed invention unanticipated and unobvious. It is therefore respectfully requested that all of claims 8-18 be allowed, and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicant's undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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